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EXAMINER				
FANG, SHANE				
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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/550219
Filing Date: 03/23/2004
Appellant(s): JORDENS ET AL.

James E. Howard
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 08/18/10 appealing from the Office action mailed 03/26/10.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

Claims 21-40 are rejected from the second non-final action mailed 03/26/10. The examiner apologize the mistaken indication of final rejection in the conclusion part of the last action. However, the PTOL-326 filed 03/26/10 indicates it was a second non-final action.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after the last rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

WO 01/23190	Kalleder et al.	04-2001
US 6,863,923	Kalleder et al.	03-2005
US 5667888	Yoshida et al.	09-1997
H.C. Stark product list	Levasil	09-2006

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 21-38 and 41-42 are rejected under 35 U.S.C. 102(b) as being anticipated by Kalleder et al. (WO01/23190, translation provided by U.S. 6,863,923, listed on previous 892) and evidenced by Yoshida et al. (US 5667888) and Levasil (H.C. Stark product list, 09/2006), all listed on previous 892.

As to claims 21-34, 36-38, and 41-42, Kalleder discloses (Ex. 3, 1:40-65, 2:5-30, 4:60-68, 5:1-10, 6:1-15, claims 1-33) method of making and a screen printing composition on glass (silkscreen process) cured higher than 450 °C comprising Si-polymer obtained by hydrolysis plus condensation of tetraethoxysilane (TEOS) with

methytriethoxysilane (MTEOS) and silica sol (evidenced by Levasil 300/30, nano dispersion, Pg. 7) with HCl as catalyst, terpineol (bp 219 °C), a dimethyl polysiloxane of M50 silicone oil, a pigment of Silk Red WR2, and a thixotrope of ethylcellulose added after hydrolysis and condensation. Ethanol is evaporated via a rotary evaporator after the hydrolysis plus condensation, and water and/or alcohols with bp° would be inherently lower than 5% after paste making process of roll milling. The composition is enamel-free, because it contains no glass frits. Terpineol is considered as a thickener to silane solution, as evidenced by Yoshida et al. (Ex. 14). Kalleder further discloses adding temperature resistance pigment such as dispersion dye (only one dispersed dye candidate) of Dispersed Red and TiO₂ or graphite (claims 25-26, out of 10 candidates). Kalleder discloses avoid using heavy metal and no heavy metal or its oxide is shown in Ex. 3.

Particular to claim 35, in view of Ex. 3, wherein red color pigment is added after hydrolysis plus condensation, one of ordinary skill would at once envisage adding Dispersed Red after hydrolysis plus condensation.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 39-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kalleder et al. (WO01/23190, translation provided by U.S. 6,863,923, listed on previous 892) and evidenced by Yoshida et al. (US 5667888) and Levasil (H.C. Stark product list, 09/2006).

Disclosure of Kalleder, Yoshida, and Levasil are adequately set forth in ¶2 and is incorporated herein by reference.

As to claim 39, Kalleder et al. discloses curing range is at least 200 °C to below the T_g of polymer matrix (claim 2). The disclosed range overlaps with the claimed range (250-280 °C).

As to claim 40, Kalleder et al. discloses optionally drying at 80-200 °C after paste printing that would inherently remove terpineol. The disclosed range overlaps with the claimed range (150-180 °C).

As to claims 39-40, it has been found that where claimed ranges overlap ranges disclosed by the prior art, a *prima facie* case of obviousness exists - see MPEP 2144.05.

(10) Response to Argument

Ground (A)

- The applicant has argued Kalleder does not disclose all the limitations of the independent claims, in particular, Kalleder fail to disclose a fully hydrolyzed and condensed enamel-free pastes (Pg. 7, ¶5). As set forth in above ¶2, the examiner

asserts Kalleder (as evidenced by Yoshida and Levasil) meet claims 21-38 and 41-42. Kalleder disclosed "enamel-free" paste and also a paste contains no alcohol with bp° substantially below 100 °C. The applicant claims "enamel-free" but does not claim "fully hydrolyzed and fully condensed".

- The applicant has shown the unexpected good results of the enamel-free pastes (Pg. 8, ¶1-2). However, the unexpected good results cannot overcome the previous 102 rejections of claims 21-38 and 41-42.

- The applicant has argued the independent claims are directed to a fully 100% hydrolyzed and condensed enamel-free paste as shown by the specification (Pg. 8, ¶3-Pg. 9, ¶2). Again, the applicant claims "enamel-free" but does not claim "fully hydrolyzed and fully condensed". As set forth in above ¶2, the examiner asserts Kalleder (as evidenced by Yoshida and Levasil) meet claims 21-38 and 41-42.

- The applicant has argued the independent claims are directed to a fully 100% hydrolyzed and condensed composition, while Kalleder discloses 20-80% degree of condensation; applicant further equates "no alcohol" to complete 100% hydrolysis and condensation (Pg. 9, ¶3-Pg.10, ¶1). Again, the applicant claims "enamel-free" but does not claim "fully hydrolyzed and fully condensed". The disclosed 20-80% degree of condensation refers to the hydrolysis plus condensation of silanes, not the overall reaction or the curing of overall composition. The applicant indicates alcohol is a

condensation and hydrolysis by-product. As set for the in above ¶2, the removal of ethanol by product is carried out via rotary evaporator and roll mill, and water and/or alcohols with bp° would be inherently lower than 5% after paste making process of roll milling, so water and/alcohol would not be part of the disclosed composition. Furthermore, even for a composition comprising partial condensation and hydrolysis product at 20-80%, no alcohol byproduct would be produced due to pause of the condensation and hydrolysis, because alcohol is a condensation and hydrolysis by-product. In light of this, the examiner disagrees with applicants' argument that equates "no alcohol" to complete 100% hydrolysis and condensation. Thus, as set for the in above ¶2, the examiner asserts Kalleder (as evidenced by Yoshida and Levasil) meet claims 21-38 and 41-42.

- The applicant has argued the examiner used an improper standard maintaining the obvious rejections (Pg. 10, ¶2-Pg.10, ¶1). It is notified claims 21-38 and 41-42 are rejected via 102b, not 103a.

- The applicant has attacked combining Kalleder with Yoshida and Levasial (Pg. 11, ¶1) because of Kalledar's failure to discloses an fully hydrolyzed and condensed enamel-free past. As set forth in above ¶2, the examiner asserts Kalleder (as evidenced by Yoshida and Levasil) meet claims 21-38 and 41-42. Kalleder disclosed "enamel-free" paste and also a paste contains no alcohol with bp° substantially below 100 °C. The applicant claims "enamel-free" but does not claim "fully hydrolyzed and

fully condensed". Yoshida is used to evidence terpineol as a thickener to silane solution, and Levasil is applied to evidence silica sol nano dispersion.

Therefore, the previous 102 rejections of claims 21-38 and 41-42 have been **maintained**.

Ground (B)

- The applicant has traversed the previous 103 rejections of claims 39-40 by arguing Kalleder as evidenced by Yoshida and Levasil fail to meet claim 38 that they depend on (Pg. 11, ¶3). As set forth in above ¶2 and response to Ground (A), the examiner asserts Kalleder as evidenced by Yoshida and Levasil meet claim 38, but Kalleder discloses ranges of curing and drying step that overlap with claimed ones of claims 39-40. It has been found that where claimed ranges overlap ranges disclosed by the prior art, a *prima facie* case of obviousness exists - see MPEP 2144.05.

- The applicant has traversed the previous 103 rejections of claims 39-40 by arguing argued the independent claims are directed to a fully 100% hydrolyzed and condensed composition, while Kalleder discloses 20-80% degree of condensation (Pg. 11, ¶4). Again, the applicant claims "enamel-free" but does not claim "fully hydrolyzed and fully condensed". The disclosed 20-80% degree of condensation refers to the hydrolysis plus condensation of silanes, not the reaction or curing of overall composition. The applicant indicates alcohol is a condensation and hydrolysis by-

product. As set for the in above ¶2, the removal of ethanol by product is carried out via rotary evaporator and roll mill, and water and/or alcohols with bp^o would be inherently lower than 5% after paste making process of roll milling, so water and/alcohol would not be part of the disclosed composition. Furthermore, even for a composition comprising partial condensation and hydrolysis product at 20-80%, no alcohol byproduct would be produced due to pause of the condensation and hydrolysis, because alcohol is a condensation and hydrolysis by-product. In light of this, the examiner disagrees with applicants' argument that equates "no alcohol" to complete 100% hydrolysis and condensation. Thus, as set for the in above ¶2 and response to Ground (A), the examiner asserts Kalleder as evidenced by Yoshida and Levasil meet and does not teach away from claim 38, but Kalleder discloses ranges of curing and drying step that overlap with claimed ones of claims 39-40. It has been found that where claimed ranges overlap ranges disclosed by the prior art, a *prima facie* case of obviousness exists - see MPEP 2144.05.

Therefore, the previous 103 rejections of claims 39-40 have been **maintained**.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/SHANE FANG/

Examiner, Art Unit 1766

/RANDY GULAKOWSKI/

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